



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,908	07/10/2003	Katsumi Hisano	240047US2RD	9556
22850	7590	04/15/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			WRIGHT, INGRID D	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Sm

Office Action Summary	Application No. 10/615,908	Applicant(s) HISANO ET AL.	
	Examiner Ingrid Wright	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/10/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification Objections

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: With respect to claim 1-5, it is unclear from the Figs. which elements the Applicant is referring to as the cooling portion, first flow channel and second flow channel. From the Summary of the invention, these elements appear to refer to the casing (9), inflow port (19) and outflow port (23). Clarification and consistency of terminology between the claim language and the specification is required. The specification should be amended in order to comply with terminology recited in the claims.

For the purpose of examination, the examiner is interpreting the cooling portion to be the casing (9), the first flow channel to be the inflow port (19) and the second flow channel to be the outflow port (23).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102 (b) as being anticipated by 102 (b) by Cheon (US PN 6234240 B1).

With respect to claim 1, Cheon teaches a cooling device (22) (Fig. 3) for cooling an electronic element (10) producing concentrated heat by a flow of a cooling medium (C), comprising: a first flow channel (58) disposed upstream of the electronic element (10) in the flow of the cooling medium (C); a second flow channel (56) disposed downstream of the electronic element in the flow of the cooling medium (C); and an active heat transport element (14) comprising a heat intake portion (18) and a heat outlet portion, (16), the active heat transport element (14) conducting heat from the heat intake portion (18) to the heat outlet portion (16), the heat intake portion (18) being thermally connected with the first flow channel (58) so as to conduct heat from the cooling medium (C), the heat outlet portion (16) being thermally connected with the second flow channel (56) so as to conduct heat to the cooling medium (C).

With respect to claim 2, Cheon teaches a cooling portion (22) (Fig. 3) for cooling the electronic element (10) by the cooling medium (C), the cooling portion (22) being disposed downstream of the first flow channel (58) and upstream of the second flow channel (56) in the flow of the cooling medium (C).

With respect to claim 3, Cheon teaches the first flow channel (58) (Fig.3), the second flow channel (56) and the cooling portion (22) are integrally formed.

With respect to claim 4, Cheon teaches that the active heat transport element (14) is a Peltier element (Column 3, Lines 28+).

Claim Rejections - 35 USC § 103

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US PN 6728102 B2) in view of Cheon (US PN 6234240 B1).

With respect to claim 5, Ishikawa et al. teaches (Fig. 16) an electronic device (1) having an electronic element (12) producing concentrated heat, the electronic device (1) having a first chassis (2) for housing the electronic element (12) and a second chassis (3) connected with the first chassis (2) by means of a hinge (24) so as to be foldable, comprising: a cooling medium circuit (see Column 9, Line 49) comprising a pump (132) for circulation of a cooling medium (Column 9, Line 49) between the first chassis (2) and the second chassis (3); a cooling device (1) housed in the first chassis (2) and connected with the cooling medium circuit (see Column 9, Line 49), the cooling device (31,34) comprising; a heat intake portion (31) and a heat outlet portion (38); a first flow channel (131) thermally connected with the heat intake portion (31) so as to conduct heat from the cooling medium to the heat intake portion (31); a cooling portion (34) for heat exchange between the electronic element (12) and the cooling medium (see

Art Unit: 2835

Column 9, Line 49); and a second flow channel (130) thermally connected with the heat outlet portion (38) so as to conduct heat from the heat outlet portion (38) to the cooling medium (see Column 9, Line 49), wherein the cooling medium flows from the first flow channel (131) via the cooling portion (34) to the second flow channel (130); and a heat radiation unit (123) housed in the second chassis (see Fig. 16) and connected with the cooling medium circuit (see Column 9, line 49) so as to radiate heat transported from the cooling device (31,34).

Ishikawa et al. does not teach an active heat transport element (Peltier).

Cheon teaches a Peltier element (Fig. 3), an active heat transport element.

Since the inventions of Ishikawa et al. and of Cheon are from the same field of endeavor (cooling) the purpose of the Peltier element being an active heat transport element as taught by Cheon would be recognized in the invention of Ishikawa et al.

It would have been obvious to a person of ordinary skill in the cooling art at the time the invention was made to utilize the Peltier element of Cheon with the device as taught by Ishikawa et al. in order to enhance heat transfer.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakanishi et al. (US PN 6351382, Kobayashi et al. (US PN 5992155), and Donahoe et al. (US PN 5757615) show the general state of the art regarding cooling for electronic elements in electronic apparatus or notebook computer configurations. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ingrid Wright whose telephone number is (571) 272-8392. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2800, ext 35. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/615,908

Page 7

Art Unit: 2835

April 13, 2005
IDW

 **ANATOLY VORTMAN**
PRIMARY EXAMINER